



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,921	07/09/2003	Takahisa Hatakeyama	826.1880	7868
21171 7590 03/09/2007 STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER SHERR, CRISTINA O	
			ART UNIT 3621	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/09/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/614,921

Applicant(s)

HATAKEYAMA ET AL.

Examiner

Cristina Owen Sherr

Art Unit

3621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6,8-12,17,28 and 36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,8-12,17,28 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is in response to applicant's amendment filed December 13, 2006. Claims 1, 2, 5, 6, 8, 10, 11, 12, 17, 28, and 36 have been amended. Claims 1-2, 5-6, 8-12, 17, 28 and 36 are currently pending in this case.

Response to Arguments

2. Applicant's arguments with respect to claims 1-2, 5-6, 8-12, 17, 28 and 36 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 5-6, 8-12, 17, 28 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al (US 2001/0018736).

5. Hashimoto discloses a central processing unit executing a program(e.g. abs, par 0004, 0078) comprising an encrypting unit encrypting a block (e.g. 0069, 0074) , and decrypting an encrypted block (e.g. par 0079, fig.2), wherein: a first private key is concealed in secrecy (e.g. par 0075); and said encrypting unit obtains from a first license a code decryption key for decrypting an encrypted block which configures a first program by decrypting with the first private key the first license of the first program (e.g. par 0074), which is encrypted with a public key pairing with the first private key (e.g. par 0075);

Art Unit: 3621

the code decryption key is recorded to said tamper resistant buffer (par 0147),
the first license includes an access condition used when an execution process of the
first program accesses a memory region, and wherein said central processing unit
further includes:

a Translation Lookaside Buffer (TLB) recording an address of the
memory region, at which the encrypted block which configures the first program is
recorded, and the access condition to the memory region (par 80),

a memory-managing unit (par 0080),

a cache(par 144), and.

a processor core ((par 0144),

wherein said TLB and said tamper resistant buffer are linked(par 144),

wherein said memory managing unit obtains the access condition to the
memory region from said TLB based on an address or a memory region, at which an
encrypted block is recorded, and further obtains the code decryption key corresponding
to the memory region from said tamper resistant buffer (par 146),

wherein said processor core determines whether an access to the memory region
is permitted to be made from the execution process based on the access condition
obtained by process if said processor core determines that the access to the
memory region is permitted to be made (par 247) and,

wherein said encrypting unit writes to said cache a code obtained by
decrypting the encrypted block within the memory region with the code decryption key
obtained by said memory managing unit.(par 146).

Art Unit: 3621

6. Hashimoto does not use the same terminology, as the instant application, “secret key” rather than “private key”, but such differences in terminology do not confer patentability. It would be obvious to one of ordinary skill in the art to adapt terminology to suit the needs of the users.

7. Regarding claim 2 –

8. Hashimoto discloses the central processing unit wherein said encrypting unit decrypts the encrypted block in units of cache when the encrypted block which configures the first program is output from a memory region to said cache (fig.8 par 0172).

9. Regarding claim 5 –

Hashimoto discloses a central processing unit wherein the code decryption key and the encryption key used to encrypt the encrypted block are a same key (e.g. par 0049).

10. Regarding claim 6 –

Hashimoto discloses a central processing unit wherein when a memory region accessed from the execution process of the first program switches from a first memory region to a second memory region, said memory managing unit further determines whether or not a code decryption key corresponding to the first memory region, which is obtained from said tamper resistant buffer, and a code decryption key corresponding to the second memory region match, and an access is made to the second memory region from the execution process if said memory managing unit determines that the code decryption keys match, or the access to the second memory region is not made from

Art Unit: 3621

the execution process if said memory managing unit determines that the code decryption keys mismatch. (e.g. 0094).

11. Regarding claim 8 –

Hashimoto discloses the central processing unit wherein: a different data encryption key is recorded to said tamper resistant buffer for each code decryption key; said encrypting unit records data within said cache to the memory region that is corresponded to the data decryption key by said TLB after encrypting the data with the data decryption key when recording the data to the memory region, and writes encrypted data within the memory region to said cache after decrypting the read data with the data encryption key when reading the encrypted data within the memory region (e.g. par 0050).

12. 17. Regarding claim 9 –

Hashimoto discloses a central processing unit wherein when data obtained by executing a first code is used by a second code, said processor core sets said TLB so as to provide the second code with an access right to a memory region to which the data is recorded, and also sets said TLB and said tamper resistant buffer so that the second code uses a data encryption key for encrypting the data when reading the data from the memory region (e.g. par 0090).

18. Regarding claim 10 –

Hashimoto discloses a central processing unit further comprising: a register; and a register access control table for performing access control for said register, wherein said processor core controls sealing and release of said register with a sealing flag within said register access control table (e.g. par 0145).

19. Regarding claim 11 –

Hashimoto discloses a central processing unit wherein when contents of said TLB is recorded to a page table within an external storage device, said encrypting unit affixes a signature to the contents to be recorded, and verifies whether or not the signature is legal when contents of the page table is captured into said TLB. (e.g. par 0147).

20. Regarding claim 12 –

Hashimoto discloses a central processing unit wherein when contents of said tamper resistant buffer is recorded to an encryption key table within an external storage device, said encrypting unit encrypts the contents to be recorded. (e.g. par 0147).

21. Regarding claim 17 –

Hashimoto discloses a central processing unit wherein: said tamper resistant buffer records unable-to-output information indicating whether or not to output corresponding information within said tamper resistant buffer to an outside of said tamper resistant buffer, and cache lock information indicating whether or not to output corresponding information to an outside of said cache; and a move of the first license between the first program and a different program is managed based on the unable-to-output information and the cache lock information. (e.g. par 0180).

22. Claims 17, 28 and 36 are rejected under the same criteria as above.

23. Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures

Art Unit: 3621

may be applied as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention as well as the context of the passage as taught by the prior art or disclosed by the examiner.

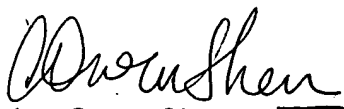
Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cristina Owen Sherr whose telephone number is 571-272-6711. The examiner can normally be reached on 8:30-5:00 Monday through Friday.

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Fischer can be reached on 571-272-6779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3621

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Cristina Owen Sherr
Patent Examiner, AU 3621



ANDREW J. FISCHER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600